State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES
6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095
(603) 271-3503 FAX (603) 271-2867

January 27, 2000

Mr. Todd Shreve
Tory Pines
RR1, PO Box 655
Francestown, NH 03043

Letter of Deficiency
DAM #085.18
DAM #085.21
DAM #085.22

RE: Irrigation Pond Dam #085.18, Tory Pines Storage Lagoon #085.21, Tory Pines Aerated Lagoon #085.22, Francestown

Dear Mr. Shreve:

The Department of Environmental Services, Dam Bureau (DES) consistently strives to enhance the safety of dams in New Hampshire through its dam safety program. One of the many instruments that plays a part in reaching this goal is our inspection program. DES is forwarding this correspondence to you to advise you that in accordance with RSA 482:12 and Env-Wr 502.02, an inspection of the above subject dams were conducted on December 9, 1999. During the visual inspections and/or file reviews, the following deficiencies were observed:

DAM #085.18:

1. The timber face along the upstream side of the dam was extremely weathered with pieces missing along the entire length. Also, the timber was inclined approximately 15 to 20 degrees from vertical in the direction upstream from the dam;

2. There were numerous voids and soft soils behind the wooden face of the dam. Additionally, along the right side of the dam soils were slumping into the pond due to missing timbers;

3. Several ornamental trees and brush were planted along the crest of the dam within 5 feet of the upstream face of the dam. Also, several ornamental trees were placed along the upstream side of the stonewall covering the outlet pipe. The soils in this location were also soft and eroding through the stone wall;

4. The 36" drop inlet did not have a debris screen/trash rack;

5. At the 36" outlet pipe the stone retaining wall/wing wall had slumped upstream within large voids that had developed behind the wall. Mr. Rob Horn, Grounds Manager for the Tory Pines golf course, had indicated that the material behind the stone retaining wall had settled since it was constructed;

6. Downstream of the outlet spillway, where water flows through a 36" culvert below Second New Hampshire Road, the road appears to have been damaged by high water washing out soils from around the culvert. Mr. Horn indicated that the road damage was observed after an early summer rain event, but he also indicated that he was not sure if it was water or vehicle traffic that caused the damage;

7 At the toe of the dam left of the vertical outlet pipe the grass swale was very wet However, the water did not appear to be flowing in the swale at the time of this inspection; and

8 There was no operation and maintenance plan on file with the DES

DES believes that the above deficiencies can be corrected by performing the following items by the indicated date:

March 1, 2000:

1. Repair or replace the upstream face of the dam. Depending on what type of repair or replacement procedure used, a wetland and/or dam reconstruction permit may be necessary. As part of this repair fill and compact all voids behind the upstream face with suitable soils;

2 Fill all voids with compacted soils upstream of the stone wall/wing wall and place a vegetative cover or other erosion resistant covering. Repair or replace the existing stone wall/wing wall that has slumped upstream from the outlet pipe and regrade adjacent ends of each section to match the downstream slope;

3. Remove the ornamental trees and bushes from the crest of the dam and from behind the stone wall retaining wall covering the outlet pipe. These areas should also be treated with grass or other erosion resistant covering;

4. Place a trash rack on the 36 inch drop inlet;

5. To eliminate the damage to Second New Hampshire Road reconfigure the inlet area to the existing pipe and/or increase the size of the culvert beneath the road;

6. Monitor the toe of the dam for seepage; and

7 Prepare and submit to DES a written operational procedure plan. The plan should describe the control of impoundment levels, monitoring and maintenance procedures, and identify emergency contact personnel.

DAM #085.21:

1. Erosion of the west embankment was observed in several locations;

2. Brush/tree growth was noted along the west and southwest embankment and within the drainage ditch; and

3. There was no operation and maintenance plan on file with the DES.

DES believes that the above deficiencies can be corrected by performing the following items by the indicated date:

April 30, 2000:

1. Fill the voids from the surface erosion on the west embankment with properly compacted materials/soils and then establish a hearty grass cover on all the disturbed areas;

2. Establish/enhance the vegetative cover of the crest of the embankment in any areas where it is sparse;

3. Remove brush/tree growth from the west and southwest embankments and within the drainage ditch; and

4. Prepare and submit to DES a written operational procedure plan. The plan should describe the control of impoundment levels, monitoring and maintenance procedures, and identify emergency contact personnel.

DAM #085.22:

1. Erosion of the west embankment was observed in several locations;

2. Brush/tree growth was noted along the west embankment and within the drainage ditch;

3. Within the drainage ditch and along the west embankment between aeration lagoons a 12" drainage pipe is below a gravel walkway. The level of the soil, at the downstream end, is at the top of this pipe and the pipe is filled up to approximately 6 inches with gravel; and

4. There was no operation and maintenance plan on file with the DES

DES believes that the above deficiencies can be corrected by performing the following items by the indicated date:

April 30, 2000:

1. Fill the voids from the surface erosion on the west embankment with properly compacted materials/soils and then establish a hearty grass cover on all the disturbed areas;

2. Establish/enhance the vegetative cover of the crest of the embankment and with the drainage ditch;

3. Remove brush/tree growth from the west embankment and within the drainage ditch;

4. Clean out the existing drainpipe in the west drainage ditch and reinstall the 12 inch cmp culvert to allow adequate drainage to prevent future clogging; and

5 Prepare and submit to DES a written operational procedure plan. The plan should describe the control of impoundment levels, monitoring and maintenance procedures, and identify emergency contact personnel.

DES is requesting that you complete and submit the attached "Intent to Complete Repairs" form, within 30 days of receipt of this letter, that will provide for correction of the identified deficiencies by the date(s) indicated above. If you believe changes to the items of work or dates are necessary, please make the changes directly on the form and provide a brief explanation. We have enclosed a self addressed stamped envelope for you to return this form.

Our intent in sending you this correspondence is to make you aware of items that DES believes warrant your attention to insure the continued safe operation of your dams. It is our hope that, through the submittal of the attached form and a commitment to keeping well-maintained dams, you will voluntarily comply with the requested items of work. If we do not receive the intent form or a similarly adequate written reply, we will assume that you are in agreement with our findings and recommendations and DES will carry out follow-up inspections accordingly.

If you have any questions or comments regarding this Letter of Deficiency or would like to be present at future inspections, please contact me at 271-3406, or write to the Water Division at the address listed on the top of the previous page.

Sincerely,

COPY

Dale F. Guinn
Dam Safety Engineer

Attachments Guideline for an O&M plan, DB8, DB13
cc: Rob Horn
Gretchen Rule
Town of Francestown
Certified # P 372 675 921
DFG/was/h:/safety/wendy/lod/085-18/21/22lod.doc